

WHAT IS CLAIMED IS:

1. A medical needle shield apparatus comprising:

a shield being extensible from a retracted position to an extended position to enclose a distal end of a needle, said needle including a proximal end mounted to a hub and said shield comprising:

an outer bearing having a sidewall defining a first interior space about a longitudinal axis;

an inner bearing having a sidewall defining a second interior space about said longitudinal axis, wherein said needle is disposed in said second interior space and is movable along said longitudinal axis;

said inner bearing disposed in said first interior space and moveable therein along said longitudinal axis;

a wedging portion movable with said inner bearing for wedging against said needle to secure the distal end of said needle within the second interior space in the extended position; and

a tether having a proximal end connected to said hub and a distal end connected to said inner bearing for preventing separation of the shield from the needle in the extended position.

2. The needle safety apparatus according to claim 1, wherein said wedging portion is pivotably mounted to said inner bearing.

20 3. The needle safety apparatus according to claim 1, wherein said wedging portion includes a cam surface which engages a sidewall of said outer bearing to pivot said wedging portion when said inner portion is moved along said longitudinal axis.

25 4. The needle safety apparatus according to claim 1, wherein said wedging portion is pivotably mounted to said interior bearing and includes a cam surface which engages said outer bearing sidewall to pivot said wedging portion to an occluding position when said inner bearing is moved along said longitudinal axis.

5. The needle safety apparatus according to claim 4, wherein said outer bearing sidewall includes a cutout extending at least partially therethrough, said cutout providing clearance for said wedging portion when said wedging portion is pivoted away from said second interior space.

5 6. The needle safety apparatus according to claim 5, wherein said cutout includes a distal surface which engages said cam surface to pivot said wedging portion.

7. The needle safety apparatus according to claim 4, wherein said outer bearing sidewall includes an enclosed space extending from the sidewall, said enclosed space providing clearance for said wedging portion when said wedging portion is pivoted away from said second
10 interior space.

8. The needle safety apparatus according to claim 1, wherein said tether comprises extendable linkage segments.

9. The needle safety apparatus according to claim 1, wherein said tether comprises a cord.

15 10. The needle safety apparatus according to claim 1, wherein said inner bearing moves telescopically in said first interior space in response to proximal movement of said hub and extension of said extendable linkage segments.

20 11. The needle safety apparatus according to claim 1, wherein said outer bearing includes a latching arm extending into said first interior space to latch said inner bearing in a proximal position when said inner bearing is moved proximally along said longitudinal axis beyond said latching arm and wherein said wedging portion is thereby retained in a pivoted position.

25 12. The needle safety apparatus according to claim 1, wherein said inner bearing includes a latching arm extending into said second interior space to latch said outer bearing in a proximal position when said outer bearing is moved proximally along said longitudinal axis

beyond said latching arm and wherein said wedging portion is thereby retained in a pivoted position.

13. The needle safety apparatus according to claim 1, wherein said outer bearing includes a distal end having a planar surface substantially orthogonal to said longitudinal axis.

5 14. The needle safety apparatus according to claim 13, wherein planar surface is hingedly attached to said outer bearing.

15. The needle safety apparatus according to claim 1, wherein said needle includes a bend of about 90 degrees between said proximal and distal ends.

10 16. The needle safety apparatus according to claim 1, wherein said hub includes a winged portion extending therefrom, said winged portion providing a surface area for gripping.

17. A needle safety apparatus comprising:

an outer bearing having a sidewall defining a first interior space about a longitudinal axis;

15 an inner bearing having a sidewall defining a second interior space about said longitudinal axis, said inner bearing disposed in the first interior space and moveable therein along said longitudinal axis;

a needle disposed in said second interior space and movable along said longitudinal axis;

20 a wedging portion pivotably mounted to said inner bearing and movable with said inner bearing to secure a distal portion of the needle within said second interior space, said needle having proximal end mounted to a hub, said hub being connected to said inner bearing by a tether;

wherein said inner bearing moves telescopically in said first interior space in response to distal movement along said longitudinal axis;

wherein said wedging portion includes a cam surface which engages said outer bearing sidewall to pivot said wedging portion when said inner portion is moved along said longitudinal axis;

5 wherein said outer bearing sidewall includes a cutout extending at least partially therethrough, said cutout providing clearance for said wedging portion when said wedging portion is pivoted away from said second interior space, said cutout including a distal surface which engages said cam surface to pivot said wedging portion;

10 wherein said outer bearing includes a latching arm extending into said first interior space to latch said inner bearing in a proximal position when said inner bearing is moved proximally along said longitudinal axis beyond said latching arm and wherein said wedging portion is thereby retained in a pivoted position;

wherein said outer bearing includes a distal end having a planar surface substantially orthogonal to said longitudinal axis; and

15 wherein said needle includes a proximal end and a bend of about 90 degrees between said proximal and distal ends and a tube attached to said proximal end, said hub includes a winged portion extending therefrom, said winged portion providing a surface area for gripping.

18. The needle safety apparatus according to claim 17, wherein said tether comprises extendable linkage segments.

19. The needle safety apparatus according to claim 17, wherein said tether comprises
20 a cord.

20. The needle safety apparatus according to claim 17, wherein said hub includes a sidewall defining a cavity and proximal end forming a luer fitting.

21. The needle safety apparatus according to claim 17, wherein said outer bearing includes a distal flange.

22. A needle safety apparatus comprising:

an outer bearing having a sidewall defining a first interior space about a longitudinal axis;

an inner bearing having a sidewall defining a second interior space about said longitudinal axis, said inner bearing disposed in the first interior space and moveable therein
5 along said longitudinal axis;

a needle disposed in said second interior space and movable along said longitudinal axis;

a wedging portion pivotably mounted to said inner bearing and movable with said inner bearing, said needle having a distal end including a needle tip and a distal end mounted to a hub, said hub being connected to said inner bearing by extendable linkage segments;

10 wherein said inner bearing moves telescopically in said first interior space in response to proximal movement of said hub and extension of said extendable linkage segments;

wherein said wedging portion includes a cam surface which engages said outer bearing sidewall to pivot said wedging portion when said inner portion is moved along said longitudinal axis to limit proximal movement of said inner bearing;

15 wherein said outer bearing sidewall includes a cutout extending at least partially therethrough, said cutout providing clearance for said wedging portion when said wedging portion is pivoted away from said second interior space, said cutout including a distal surface which engages said cam surface to pivot said wedging portion; and

20 wherein said outer bearing includes a latching arm extending into said first interior space to latch said inner bearing in a proximal position when said inner bearing is moved proximally along said longitudinal axis beyond said latching arm and wherein said wedging portion is thereby retained in a pivoted position.

23. A medical needle shield apparatus comprising:

a shield being extensible from a retracted position to an extended position to enclose a distal end of a needle, said needle including a proximal end mounted to a hub and said shield comprising:

5 an outer bearing having a sidewall defining a first interior space about a longitudinal axis;

 an inner bearing having a sidewall defining a second interior space about said longitudinal axis, wherein said needle is disposed in said second interior space and is movable along said longitudinal axis;

10 said inner bearing disposed in said first interior space and moveable therein along said longitudinal axis;

 means for securing the distal end of said needle within the second interior space in the extended position; and

 means for preventing separation of the shield from the needle in the extended position.

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